

News story: Scientists set to overhaul International System of Units

On 16th November 2018, measurement scientists from more than 60 countries will come together to witness the vote on the redefinition of the International System of Units (SI), changing the world's definition of the kilogram, the ampere, the kelvin and the mole. If agreed, these changes will come into force on 20th May 2019. The vote will take place at the General Conference on Weights and Measures in Versailles, France, which is organized by the International Bureau of Weights and Measures (BIPM). The decision will mean that all SI units will be defined in terms of constants that describe the natural world. This will assure the future stability of the SI and open the opportunity for the use of new technologies, including quantum technologies, to implement the definitions.

The decision will bring an end to the use of physical objects to define measurement units. The kilogram, for example, is currently defined as being the mass of the International Prototype of the Kilogram, a cylinder of a platinum alloy stored at the BIPM in France. This object has served science and technology well for nearly 130 years, but its stability during this period could only be confirmed by comparisons with identical copies, which is a difficult process and potentially inaccurate. The proposed change will see the kilogram defined by the Planck constant – the fundamental constant of quantum physics.

“The SI redefinition is a landmark moment in scientific progress.” said Martin Milton, Director, International Bureau of Weights and Measures (BIPM), “Using the fundamental constants we observe in nature as a foundation for important concepts such as mass and time means that we have a stable foundation from which to advance our scientific understanding, develop new technologies and address some of society's greatest challenges.”

[Julian Braybrook](#), Government Chemist, said: “In many of the chemical sciences, the concepts and application of measurement science are a largely accepted practice. The redefinition of some of the SI may therefore seem significant but in common practice, little will change as a result. A system based on the fundamental constants of nature, rather than potentially changing physical artefacts such as the kilogram, will ensure a more stable basis for the accurate and safe measurement of quantities of food ingredients or contaminants, the premise of which underpins discharge of the statutory duties of the Government Chemist.”

The expected new definitions impact four of the seven base units of the SI: the kilogram, ampere, kelvin and mole, and all units derived from them, such as the volt, ohm and joule.

- The kilogram – will be defined by the Planck constant (h)
- The ampere – will be defined by the elementary electrical charge (e)
- The kelvin – will be defined by the Boltzmann constant (k)

- The mole – will be defined by the Avogadro constant (N_A)

Although the size of these units will not change (a kilogram will still be a kilogram), the four redefined units will join the second, the metre and the candela to ensure that the revised SI will maintain its relevance by facilitating technical innovations. Just as the redefinition of the second in 1967 provided the basis for technology that has transformed how we communicate across the globe, through GPS and the internet, the new changes will have wide-reaching impact in science, technology, trade, health and the environment, among many other sectors.

For more information about the work the Government Chemist does contact:

[Press release: Crickhowell High Street crowned "UK's best" in Great British High Street Awards](#)

Crickhowell High Street has been crowned the UK's best in this year's Great British High Street Awards, sponsored by Visa, winning £15,000 for the local community.

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crowned “UK’s best” in Great British High Street Awards

- Crickhowell High Street has been crowned the overall winner of the government-run Great British High Street Awards 2018, sponsored by Visa
- The Welsh high street, commended for its community-led initiatives and strong network of independent businesses, wins £15,000 for the local community
- The result reflects strong public support on social media, in addition to a panel of judges
- Champion and Rising Star High Streets across all 4 Home Nations also announced

Located in a bustling rural town nestled in the Usk Valley on the edge of the Brecon Beacons, Crickhowell High Street was announced as the overall winner of the Great British High Street Awards 2018 at a prestigious ceremony at Lancaster House, attended by High Streets Minister Jake Berry MP and representatives from the 37 shortlisted high streets.

Communities Secretary Rt Hon James Brokenshire said:

Congratulations to Crickhowell and to all of today’s winners at the Great British High Street Awards. I am delighted to see so many people get behind their local high street.

This government has put high streets at the centre of the Autumn Budget and we are determined to support them to adapt and thrive for generations to come.

High Streets Minister Jake Berry MP says:

Congratulations to Crickhowell on being crowned the home of the UK’s best high street in this year’s Great British High Street Awards.

The Awards celebrate the great work that is being done to revive, adapt and diversify our high streets and the quality of entries this year has been outstanding.

It’s a sure sign that, across the whole UK, there’s a determination from local communities to keep their high street alive and kicking and we hope this year’s Awards provides the inspiration for others to follow suit.

Dean Christy of the Crickhowell Corn Exchange nominated the town’s high street following the introduction of an ambitious initiative aimed at driving

footfall to the high street, whilst maintaining that local people had their say on what was best for their high street.

The community-led Totally Locally Campaign brought over 100 local shops and businesses together to promote one another and run initiatives to both boost their businesses and provide the local community with vital services.

The campaign also inspired 267 people passionate about the future of their high street to collectively purchase and renovate a former High Street pub – the Corn Exchange – into three new shops with three residential properties above.

Crickhowell High Street also boasts strong environmental credentials, being home to the first Zero Waste shop in Wales, whilst establishing Plastic Free Crickhowell – an initiative to reduce the use of plastic.

Awards judge Hemlata Narasimhan, Head of Merchant Services at Visa Europe, commended the community of Crickhowell, saying:

Crickhowell is a fantastic example of a community that has made huge strides in transforming its high street and significantly improving the experience for locals and visitors alike.

The Totally Locally campaign, which has inspired an army of volunteers to ensure the high street and surrounding areas thrive, is a shining example of how independent, family-run businesses can come together to help drive footfall and make the high street a better place for all. In fact, recent research by Visa found that a majority of people (52%) would use their high street more if it opened more shops, whilst four in ten (40%) said a more varied mix of services would make it more appealing.

Speaking at the Awards ceremony, Dean Christy of Crickhowell Corn Exchange, commented:

We are absolutely thrilled to be named the UK's best high street and hugely grateful to both the Great British High Street Awards and Visa for making this dream come true!

None of this would have been possible without the ongoing commitment, hard work, dedication and drive of the whole community of Crickhowell and the surrounding area – it's the people that make our high streets such special places and this Award is for you all!

In addition to the overall winner, 8 high streets, 2 from each home nation, won awards in the Champion and Rising Star categories, whilst High Street Heroes – those individuals who have gone above and beyond for their local high street – were also recognised.

The full list of winners is as follows:

Overall UK winner

Champion High Streets

- England: Altrincham Town Centre
- Scotland: High Street, Alness
- Wales: High Street, Crickhowell
- Northern Ireland: Portadown Town Centre

Rising Star High Streets

- England: Burnley Road, Todmorden
- Scotland: High Street, Newport-on-Tay
- Wales: High Street, Cowbridge
- Northern Ireland: Bow Street, Lisburn

The shortlisted high streets across all the categories were commended for giving back to their local communities, improving customer experience, protecting the environment and digitally transforming their high streets.

The Great British High Street Awards 2018, which is being run by the Ministry of Housing, Communities & Local Government, sponsored by Visa and backed by other partners, recognises and celebrates the local achievements of UK high streets and supports the communities in which we all live and work.

For more information about the Great British High Street Awards 2018 and details on all the winners, visit: www.thegreatbritishhighstreet.co.uk

To get involved in the conversation, members of the public can support their local high street on social media using #MyHighStreet via:

Research

The research was conducted by 3Gem between 26 April and 8 May 2018 and surveyed 2,000 consumers and 750 independent high street retailers across the UK.

Prizes

The prizes include 4 x £5,000 contribution towards a street party for Champion Award winners; 4 x £5,000 grant towards a local community / technology project for Rising Star Award winners and; 1 x £10,000 grant for a local community project for the Overall UK Award winner. Visit <https://thegreatbritishhighstreet.co.uk/terms> for Full Terms & prize details.

Contact

For more press information about the Great British High Street Awards 2018, to request high-res images and video footage or to arrange an interview, please contact Grayling: visahighstreet@grayling.com

About Visa Inc.

Visa is the world's leader in digital payments. Our mission is to connect the world through the most innovative, reliable and secure payment network – enabling individuals, businesses and economies to thrive. Our advanced global processing network, VisaNet, provides secure and reliable payments around the world, and is capable of handling more than 65,000 transaction messages a second. The company's relentless focus on innovation is a catalyst for the rapid growth of connected commerce on any device. As the world moves from analogue to digital, Visa is applying our brand, products, people, network and scale to reshape the future of commerce. For more information, [visit our website](#)), the [Visa Vision blog](#), and [@VisaUK](#).

[Speech: Policy for progress: ending FGM and forced marriage](#)

This weekend, I read some good news about FGM. Now, you might think, quite understandably, that sounds like a contradiction – how can you have good news about FGM?

But I did – at least that's what it felt like.

A study published in BMJ Global Health has suggested that rates of female genital mutilation have fallen dramatically in Africa.

It found that the biggest fall in cutting was in East Africa where the study claimed the prevalence rate has dropped from 71% of girls under 14, that was in 1995, to 8% in 2016.

Now there are several hypotheses for why this has happened. One is that it's all down to the mums. Lots of money has rightly gone into educating more and more women in Africa.

These educated women are then making different decisions for their own daughters to the decisions that their mothers made for them, but I don't think this tells the full story.

I think this apparent decline in FGM – which is reflected in other countries too – is also down to you and other people like you who couldn't join us today. People who work tirelessly to end FGM.

It's thanks to your work as frontline professionals, as campaigners, as policymakers as experts, that the prevalence of FGM has declined in most countries around the world. It is thanks to you that today a girl is about a third less likely to be cut than 30 years ago.

So I want to start by thanking you for all the work that you do fighting this most barbaric crime.

We also have representatives with us today who are working hard to eliminate another crime which disproportionately affects women – and that's forced marriage. I want to extend my welcome to you too.

I know that some of you in the audience have also travelled a very long way to be here: from Canada and Pakistan and Kenya and thank you for taking that very long journey to be with us.

After such a long journey, you'll be pleased to hear there's going to be a fascinating programme planned for the next 2 days.

You're going to hear from a range of people who have been working to tackle FGM and forced marriage across the world, including some survivors.

I want to give particular thanks to:

- Jaha Dukureh
- Hoda Ali
- Sarian Karim-Kamara
- Matt and Zee

I want to thank you for agreeing to share your stories with us all to hear over the next 2 days, because I think being asked to share your knowledge at an event like this is one thing, but being asked to share your experience, is quite another.

Take Jaha for example. She was born in the Gambia in 1989 and was subjected to FGM when she was just one week old. At 15, she was sent to New York and forced to marry a man who was much older than she was. She managed to flee that marriage and later remarried and moved to Atlanta, before returning home to the Gambia in 2018 where she now lives with her 3 children.

She's been a campaigner against female genital mutilation and forced marriage since she was a teenager and she is the founder and CEO of Safe Hands for Girls, an NGO which advocates for the end of FGM and forced marriage. And Jaha's role was instrumental in convincing President Obama's administration to investigate the prevalence and the profile of FGM in the USA and in convincing the Gambian government to outlaw FGM in 2016.

That's quite a life story and an amazing CV! You'll hear from Jaha very shortly.

And tomorrow you'll hear from Zee from the Karma Nirvana Survivor Ambassador Programme. She was born into a traditional Afghan family. She was the youngest of 5 and the only girl. She was promised at birth to another family, and at 13, she was engaged to be married. With a forced marriage looming, she ran away from Bradford and she came to London.

Her family disowned her because she had run away, because she had called the authorities, and because in their eyes they thought and they claimed she had

brought shame on the family. Now Zee campaigns so that no-one else has to face what she had to go through.

I would also like to take the opportunity today to pay tribute to Nimko Ali, an FGM survivor and tireless campaigner who I've had the privilege to meet a number of times.

I won't speak for too long because I think it's important that you hear from these campaigners next, but I wanted to take this opportunity to talk to you briefly about what the UK government is doing to tackle FGM and forced marriage.

Because I believe that all governments should take interest in this and they have a crucial role to play in bringing an end to what can only be described as medieval practices.

These crimes in my view are despicable, inhumane and uncivilised. They should not be dressed up as 'culture', 'tradition' or some kind of 'private family business' – because they are none of these things.

I'm pleased to say that here in the UK, we already have some of the toughest laws in the world against these crimes. We've made it an offence to fail to protect a girl from FGM; we introduced FGM Protection Orders; we created a mandatory reporting duty requiring specified professionals to report known cases of FGM in children to the police; and we're funding the national FGM Centre.

On forced marriage, we're taking action too.

This is the first UK government to make forced marriage a criminal offence and I've been encouraged by recent convictions.

For example, you might have heard or remember there was a conviction earlier this year after a victim was rescued by the British High Commission in Bangladesh. We also run a highly successful forced marriage public helpline which I think is making a real difference to people's lives.

The support offered ranges from providing information and guidance about forced marriage right through to organising repatriation and rescue missions.

Last year, the Forced Marriage Unit handled nearly 1,200 possible cases of forced marriage. And just last month I announced that when women have the courage to come forward and inform the Home Office they are being forced to sponsor a spousal visa against their will, we will not only protect their anonymity, but we will do everything we can to revoke that visa.

Our efforts, of course, extend overseas too. I know that we work with many of the organisations that some of you represent here today.

Recognising that FGM and forced marriage are international issues and this is very much integral to the way we approach this.

We know that people in the UK – particularly children and young people – are

at risk of being taken overseas and forced into marriage or subjected to FGM.

To safeguard against those at risk, for example, we have a rolling programme of joint operations by the police and the Home Office's Border Force, that takes place at our airports during school holidays.

These joint operations target inbound and outbound flights to and from these high-prevalence countries to try and stop these crimes.

Our efforts to tackle both FGM and forced marriage have starting paying off.

There's now a greater understanding of these crimes than ever before and more people than ever before are being protected.

Over 1,600 Forced Marriage Protection Orders have been granted and 248 FGM Protection Orders.

Despite all of this we also understand we need to do more. Stories like Jaha's and Zee's are a reminder of that. These horrific crimes are still happening, and perpetrators are still slipping through the net without being brought to justice.

I do think it's time for us in the UK to redouble our efforts.

That's why today I'm pleased to announce that I'm launching a public consultation on how we can strengthen the safeguarding response to forced marriage.

One of the questions we will be asking is whether we should introduce a new mandatory duty requiring professionals to report cases of forced marriage to the authorities.

I'm also pleased to announce following the successful FGM communication campaign that we launched last week that today I'm unveiling a new government communications campaign to educate the public about what constitutes a forced marriage and the fact it's illegal.

Here are 2 of the posters. I would also like to show you a sneak 30-second peek of our campaign video. I think having these videos and using them on all sorts of platforms including social media will really make a difference. But we know government action alone is not going to be enough. We need your help to raise awareness across the UK and around the world. We need you to provide services for survivors and victims and we need you to help us bring more perpetrators to justice.

This conference is a great opportunity for all of us to share knowledge, experience, ideas and best practice with one another.

Over the next 2 days, you'll hear from survivors, from community groups, from young people and from professionals, both here in the UK and from the world.

I'm clear that by working together, we can end these appalling crimes and build a much safer world for our children – and in particular – for our

daughters.

Thank you very much